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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,124	08/25/2003	Yeon-Kyoung Jung	1293.1971	9835

21171 7590 05/05/2005

STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER
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KLEMANSKI, HELENE G

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/647,124	<b>Applicant(s)</b> JUNG ET AL.	
	<b>Examiner</b> Helene Klemanski	<b>Art Unit</b> 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-14 is/are allowed.
- 6) ☒ Claim(s) 1-11 and 15-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/30/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Claim Objections***

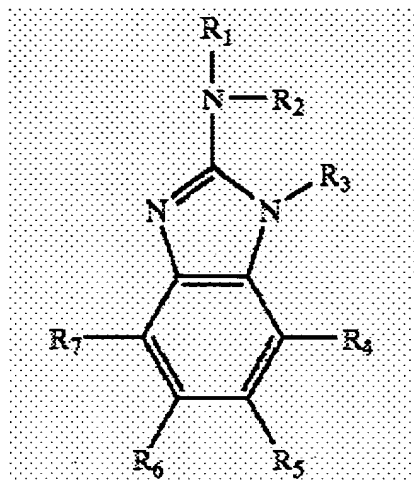
1. Claims 19, 22, 23, 27 and 30 are objected to because of the following informalities: in claim 19, line 4, the term "1,2,6-h exanetriol" should be replaced with the term "1,2,6-hexanetriol"; in claim 22, line 3, the term "tioglycol" should be replaced with the term "thioglycol"; in claim 23, line 2, the term "of]" should be replaced with the term "of."; in claim 27, line 4, the term "1,2,6-h exanetriol" should be replaced with the term "1,2,6-hexanetriol"; in claim 30, line 3, the term "tioglycol" should be replaced with the term "thioglycol". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

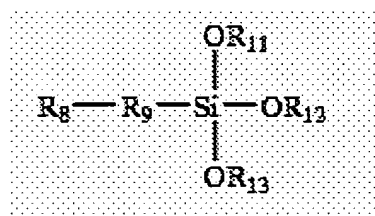
2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-11 and 15-30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an antibacterial colorant comprising a colorant molecule having at least one functional group and at least one antibacterial moiety selected from the group consisting of a carbendazim derivative of the formula



wherein the substituents are as defined by applicants and a silane derivative of the formula



wherein the substituents are as defined by applicants bound thereto by one of an ester bond or an amide bond, does not reasonably provide enablement for an antibacterial colorant comprising a colorant molecule having at least one functional group and at least one antibacterial moiety bound thereto by one of an ester bond or an amide bond. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The claims recite an antibacterial colorant comprising a colorant molecule having at least one functional group and at least one antibacterial moiety bound thereto by one of an ester bond or an amide bond. This encompasses any antibacterial moiety.

However, the specification only teaches the use of a carbendazim derivative or a silane derivative of the above formulas. Such a limited disclosure does not support the breadth of the instant claims. The examiner suggests the incorporation of claims 2 and 4 into claims 1, 6 and 15 to overcome this rejection.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 10, 20, 23 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 10, 20, 23 and 28, the phrase "low-grade alkylethers" is considered vague and indefinite since it is unclear as to what the term "low-grade" is referring to since the specification describes lower alkyl ethers in para. 0032. The examiner suggests replacing the term "low-grade" with the term "lower". Please clarify.

### ***Claim Rejections - 35 USC § 102***

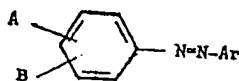
6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

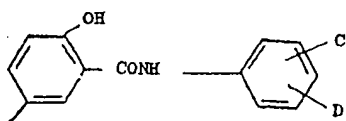
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 5-8 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 1398532.

GB 1398532 teaches azo antimicrobial azo dye of the formula



wherein A is H or  $\text{OCH}_3$ ; B is H,  $\text{SO}_3\text{Na}$  or  $\text{SO}_2\text{CH}_2\text{CH}_2\text{OSO}_3\text{Na}$ ; Ar is the formula



wherein C and D are the same or different and are H or a halogen. GB 1398532 further teaches that the antimicrobial dyes may be used to dye fabrics from an aqueous solution (i.e. ink composition). See page 1, lines 12-31, page 2, lines 10-20 and lines 87-95, examples 3-5 and claims 1-5. The antimicrobial azo dyes as taught by GB 1398532 appear to anticipate the present claims.

8. Claims 1, 5-10, 15 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Quinhong et al. ('330).

Quinhong et al. ('330) teach a substantially salt-free anionic ultraviolet absorber/quaternary ammonium complex colorant that is anti-microbial and used as a treatment agent in a water dispersion (i.e. ink composition) for textiles, paper, wood,

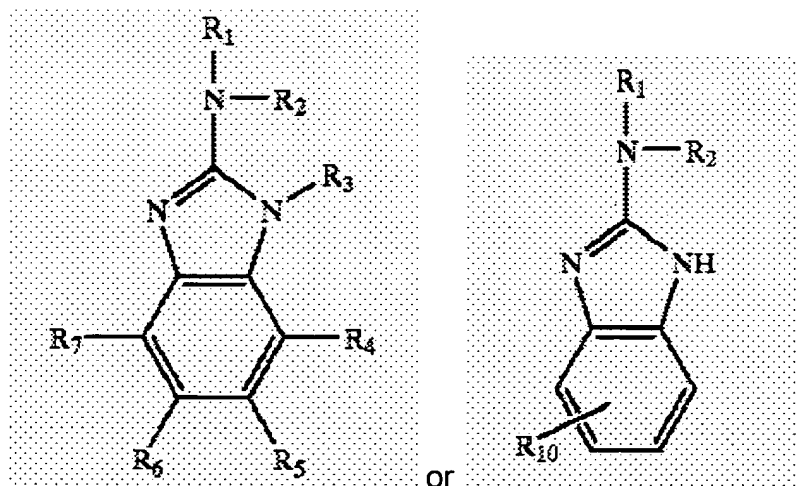
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plastics, etc. The cationic ammonium groups bonds with the free reactive groups such as a carboxylic group on the UV absorber to form ionic bonds (i.e. ester bond). See col. 3, lines 45-51, col. 4, lines 19-21, examples 1 and 4-6 and claims 1 and 12-15. The ultraviolet absorber/quaternary ammonium complex colorant as taught by Quinhong et al. (330). appears to anticipate the present claims.

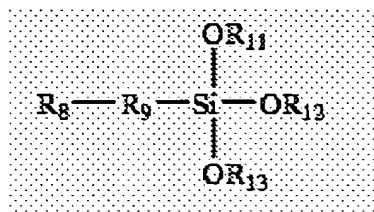
***Allowable Subject Matter***

9. Claims 12-14 are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: None of the cited prior art teach or fairly suggest an ink composition comprising a carrier medium and an antibacterial colorant comprising a colorant molecule having at least one functional group and at least one antibacterial moiety selected from the group consisting of a carbendazim derivative of the formula



wherein the substituents are as defined by applicants and a silane derivative of the formula



wherein the substituents are as defined by applicants bound thereto by one of an ester bond or an amide bond.

### ***Conclusion***

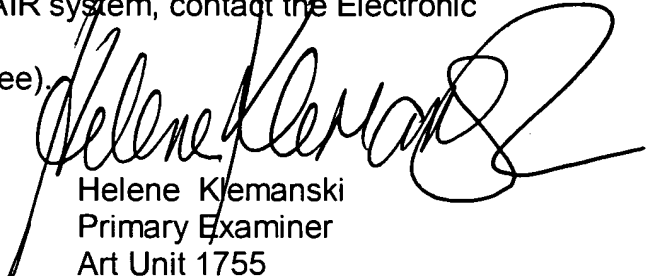
The remaining references listed on forms 892 and 1449 have been reviewed by the examiner and are considered to be cumulative to or less material than the prior art references relied upon in the above rejections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene Klemanski whose telephone number is (571) 272-1370. The examiner can normally be reached on Monday-Friday 5:30-2:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Helene Klemanski  
Primary Examiner  
Art Unit 1755



HK  
May 2, 2005